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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,135	09/27/2001	David Henry Hoeft	SE.01-01	1715
34431	7590	05/26/2005	EXAMINER	
HANLEY, FLIGHT & ZIMMERMAN, LLC			PROCTOR, JASON SCOTT	
20 N. WACKER DRIVE			ART UNIT	PAPER NUMBER
SUITE 4220				
CHICAGO, IL 60606			2123	

DATE MAILED: 05/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/964,135	HOEFT, DAVID HENRY	
	Examiner Jason Proctor	Art Unit 2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-9 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-9 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 27 September 2001 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-9 have been submitted for examination. Claims 1-9 have been rejected.

Please see attached requirement for information under 37 CFR 1.105.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claim 5 is rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.
2. Claim 5 consists entirely of "means for" limitations and appears to seek coverage under 35 U.S.C. § 112, sixth paragraph, based on an analysis of the claims as set forth in MPEP 2181. However, the specification is not written in a way that enables a person of ordinary skill in the art to make and use the invention as recited by claim 5. For example, the specification (page 6, lines 9-13) states:

The arithmetic processing unit 5 consists of a arithmetic operator, an operation sequence memory, an input port, a graphic data input port, a design object graphic data search signal output port, and a design reference data search signal output port. Graphic data, to be displayed, is produced in the arithmetic processing unit and stored in the graphic image data memory.

This section is interpreted as a critical portion of the enabling support for steps (a) and (b) of claim 5. This section is not enabling because it is unknown what several

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components of the “arithmetic processing unit” are. A “design object graphic data search signal output port” is not recognized as a standard component of a standard arithmetic processing unit and it is unknown what this component contributes to the claimed invention. The disclosure fails to explain what a “design object graphic data search signal output port” is or does. Confronted with this exemplary use of nonstandard and unexplained terminology, a person of ordinary skill in the art would be unable to make and use the “means for determining” and “means for graphically displaying”, as claimed, based on the disclosure of the application.

3. Claims 2 and 7 recite a step of “selectively removing layout object data from the collection using the functional data”. The disclosure does not teach how functional data removes layout object data from the collection. A person of ordinary skill in the art would not know how to use layout object data which comprises functional data to remove layout object data using the functional data.

4. Claims 3 and 8 are rejected under 35 U.S.C. § 112, first paragraph, because the specification, while being enabling for rotating a pipe 180° so that its orientation is conducive to installation of a swing joint, does not reasonably provide enablement for rotating any pipe 180°. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. The disclosure teaches rotating a pipe in a specific context, however claims 3 and 8 are not limited to any such context.

5. Claims 4 and 9 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter

which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification does not adequately describe a step of "consolidating the layout object data in the design layout". The specification briefly contemplates consolidating "pipe segments" (page 12, lines 10-14), however no description of "consolidating the layout object data" is provided. The Examiner remarks that the definition of "consolidating data", as would be recognized by a person of ordinary skill in the art, is completely different than "consolidating pipe segments in a CAD system".

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-9 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
7. In general, the claims are replete with vague language which hinders attempts at deciphering the intended limitations. For example, claim 1 recites the phrase "retrieving layout object data of layout objects specified by the input means and input data graphically representing the specified pipe layout objects from the storage," which can be parsed at least two different ways. Does this limitation recite retrieving "layout object data" or does it recite retrieving "layout object data" and "input data"? The above is to be regarded as exemplary of the state of the claims.

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8. Additionally, the claims are replete with seemingly synonymous language which, in context, results in an extremely vague set of limitations. For example, claim 1 recites steps of "retrieving" and "collecting" which may or may not be functionally equivalent, "generating" and "storing" which may or may not be functionally equivalent, and "establishes" which appears to mean "defines" but, all things considered, it is difficult to presume. The use of this language, considered in the context of the entire claim, fails to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

9. In claim 1, step (a) recites the phrase "the specified pipe layout objects" which lacks antecedent basis.

10. In claim 1, it is unclear what step (b) achieves that is not performed by step (a). Step (b) appears to reiterate the portion of step (a) which recites "retrieving layout object data of layout objects". If Applicants' intention is that the step of "collecting" involves a particular sequence of operations that is not adequately described by the phrase "retrieving layout object data", clarification is respectfully requested including specific citations of the disclosure supporting that clarification.

11. In claim 1, the language of step (d) can be parsed at least two different ways. It is unclear whether this step concerns "a source pipe layout object wherein the first end is not terminating", where the "source pipe layout object" is a particular type of "layout object", or whether the step concerns "a source pipe layout object wherein the first end is not terminating [within a second] layout object". The meaning of the step is further muddled by placing the phrase "using the layout object data and the specified layout

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object data" at the end of the clause. The Examiner presumes this phrase refers to the act of "finding", the verb located at the beginning of the clause. The location of the "using" phrase makes it unclear to what that phrase refers.

12. Claims 2 and 7 recite the phrase "selectively removing layout object data from the collection using functional data" which renders these claims vague and indefinite. The phrase "selectively removing" implies a determination involving a range, however no range is explicitly or implicitly recited by the claim. Therefore, the term "selectively" in claims 2 and 7 is a relative term which renders the claim indefinite. The implicit range is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Where a claim recites a determination such as "selectively removing" but does not suggest the basis on which that determination should be made, the claim effectively recites an arbitrary determination.

13. Claim 5 recites a preamble stating "a design assisting apparatus for interactively creating swing-joint layout objects on a display device, comprising:" which presents several difficulties. The phrase "design assisting apparatus" is, to the best of the Examiner's knowledge, not an industry standard phrase. Based on the disclosure of the application, it appears that Applicant has invented "a designer assisting apparatus" rather than "a design assisting apparatus" and has interpreted this phrase accordingly. Further, the phrase "creating swing-joint layout objects on a display device" is problematic in that, to the best of the Examiner's knowledge, a person of ordinary skill in

the art of computer aided design would recognize the display device as the means for displaying objects rather than the means for creating the objects. The preamble of claim 5 is thus interpreted as "A computer aided design system for creating swing-joint layout objects which are displayed on a display device, the system comprising:".

14. Claim 6 recites steps (a), (b), (c), (d), (e), and (h). It is unclear whether steps (f) and (g) were inadvertently omitted or whether step (h) should be relabeled as (f).

15. Claim 6 recites "means for" language in step (e), however the limitation is so lengthy and recites enough abstract algorithmic steps that it is unclear whether Applicant intends coverage for this limitation under 35 U.S.C. § 112, sixth paragraph, necessitating a rejection under 35 U.S.C. § 112, second paragraph. Please see MPEP 2181. Additionally, the "processing means", as supported by the disclosure, include considerable nonstandard terminology and components, such as a "design object graphic data search signal output port", which fails to particularly point out and distinctly claim the "processing means" of claim 6, step (e).

Claim Interpretation

16. Although MPEP 2143.03 instructs that indefinite limitations must be considered (See *Ex parte Ionescu*, 222 USPQ 537 (Bd. Pat. App. & Inter. 1984)), claims 1-9 are so indefinite or replete with errors that the Examiner cannot perform a limitation-by-limitation analysis of the prior art (See *In re Steele*, 305 F.2d 859, 134 USPQ 292 (CCPA 1962)). Claims 1 and 6 recite a number of vaguely defined steps which do not appear to be enabled by the disclosure. Claim 5 recites "means for" language which is not

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adequately supported by the disclosure. Dependent claims 2-4 and 7-9 are similarly replete with vague language and limitations that are not enabled.

17. The Examiner respectfully recommends that Applicant carefully review the disclosure for adequately enabled subject matter and revise the claims to refer concisely to the enabled inventions for which patent protection is sought.

Applicants' invention is interpreted as:

In a computer aided design (CAD) system, a feature that takes as input the end of a pipe and performs the following method:

- a) retrieving or taking as input a maximum jog-over distance;
- b) identifying the closest target pipe to the input end of a pipe;
- c) if the closest target pipe is within the maximum jog-over distance, connecting the target pipe to the input end of a pipe with a swing-joint;
- d) storing the resulting design as a model of the CAD system.

The Examiner remarks that this interpretation is still vague in that it is unknown what Applicants' invention is or does if the determination at step (c) is false, however the disclosure provides no guidance regarding this issue and therefore the Examiner would be required to rely on speculative assumption to resolve this.

In general, the state of the disclosure and claims in the instant application preclude a limitation-by-limitation assessment of the claimed invention compared to the

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prior art. Therefore prior art is applied under 35 U.S.C. §§ 102 and 103 in an attempt to expedite prosecution in anticipation of future amendments rather than strictly based upon the Examiner's assumptions.

Claim Rejections - 35 USC § 102

18. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

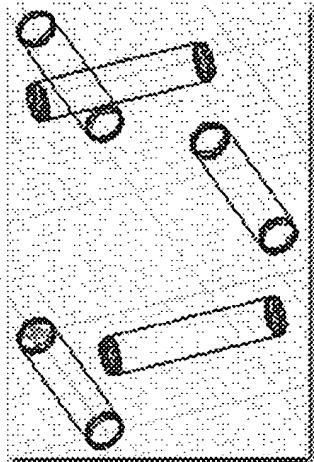
19. Claims 1-9 are rejected under 35 U.S.C. 102(b) as being anticipated by AutoSPRINK®.

20. Regarding the date of AutoSPRINK®, the Examiner has provided the trademark status of “AUTOSPRINK”, owned by M.E.P.CAD, Inc., of Las Vegas, NV, which confirms the date of first use in commerce as November, 1997.

Regarding the claimed invention, the Examiner respectfully draws Applicants' attention to the following excerpts from “AutoSPRINK online help”:

Regarding a “maximum jog-over distance” (AutoSPRINK online help, “Auto Draw Menu”, pages 6-7):

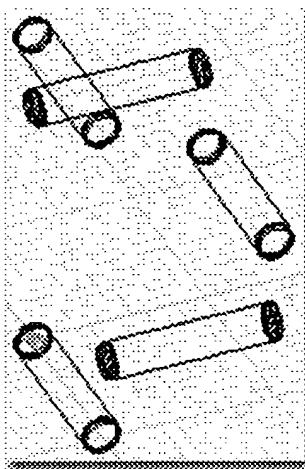
Swing Multiple



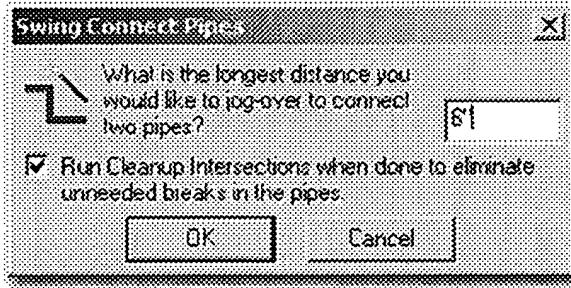
Auto Draw
Branch Lines...
Connect
Couplings...
Easy Connect...
Fittings...
Hangers...
Route Pipe...
Schedule Pipes...

Swing Multiple connects all selected pipes at 90° angles wherever possible. One thing to note, however, is that Swing Multiple does not place fittings in the draw, only pipes. To add fittings, simply run Fittings from the AutoDraw menu once Swing Multiple has finished.

To run Swing Multiple, select the pipes to be connected and, from the AutoDraw menu, choose Connect and **Swing Multiple** from the Connect submenu.



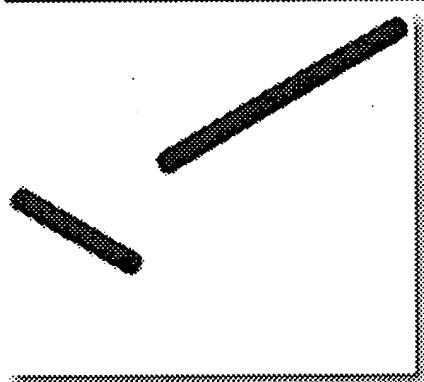
Pipes to Target Pipe
Sprinklers to Pipes...
Swing Joint
Swing Multiple



When the *Swing Connect Pipes* dialog opens, enter the maximum acceptable jog-over distance for the selected pipes. Checking the *Run Cleanup Intersections* box will eliminate any unnecessary breaks in the selected pipes. Click **OK** to activate. Remember, Swing Multiple only places pipe in the drawing; to add fittings, choose **Fittings** from the *AutoDraw* menu.

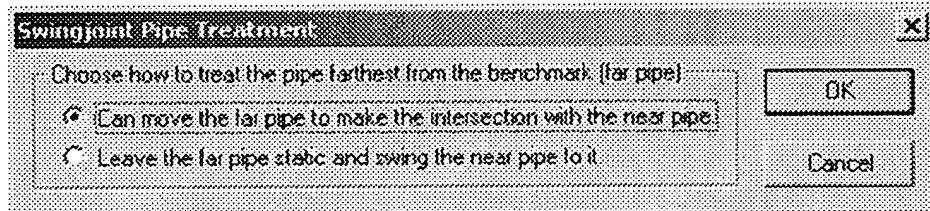
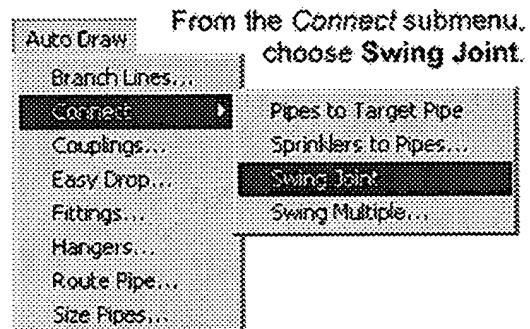
Regarding "generating a swing-joint layout object" (AutoSPRINK online help,
"Auto Draw Menu", page 6):

▲ Connect Swing Joint

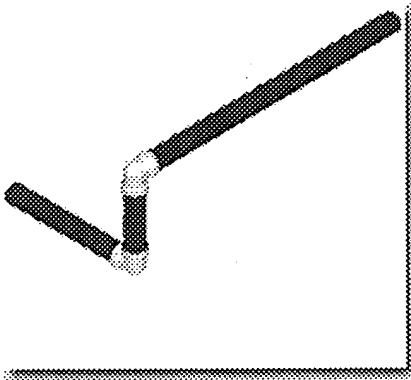


Swing Joint connects selected pipes using only 90° angles wherever possible.

Select the pipes you wish to join and click on the one that is to serve as the target.



If it is acceptable for the pipe farthest from the benchmark to be moved in order to establish the connection, choose the first option on the *Swing Joint Pipe Treatment* dialog. If the pipe farthest from the benchmark must not be moved, select the second option. Once you've designated the appropriate pipe treatment press the **OK** button.



Note: Swing Joint will both trim and create pipe to complete a joint composed of right angles.

Regarding "consolidating pipe segments" (AutoSPRINK online help, "Commands Menu", pages 12-13):

Delete Pipes and Close Gaps

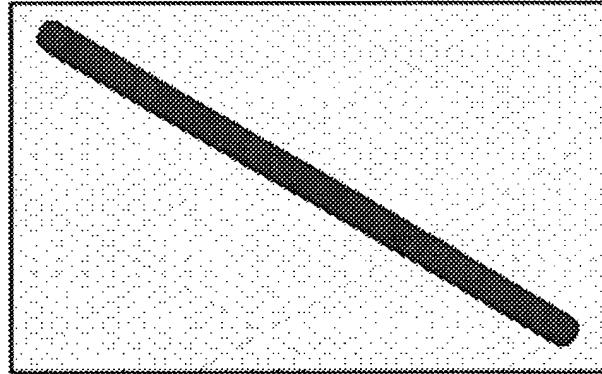
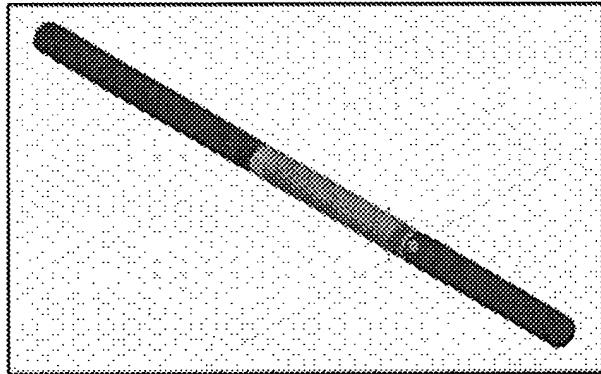
Access: Commands / Delete Pipes and Close Gaps

The Delete Pipes and Close Gaps command is used to eliminate unwanted pipe segments while maintaining a constant total length for the pipe of which the unwanted segments are a part. It removes the unwanted pipe and then stretches an abutting pipe segment to fill the resulting gap. Use this command as follows:

- o Select the pipe segment(s) to be deleted.
- o Select **Delete Pipes and Close Gaps** from the Commands menu. The selected segment(s) will be removed, and an adjacent segment will stretch to fill the gap.

If a pipe abuts both ends of the deleted pipe, the pipe forming the greater included angle with the highlighted pipe (i.e. the pipe that is more "in-line" with the highlighted pipe) will be stretched. If the included angles are equal, the longer pipe (i.e. the pipe resulting in less deflection) will be stretched.

The example below shows pipes before invoking this command (left) and after invoking it (right). Note how the longer adjoining segment is stretched to fill the gap.



Note: This command will not delete or stretch pipes under certain circumstances. For details, [click here](#).

Main Help Index

AutoSPRINK anticipates at least all of the claimed limitations which can be interpreted in light of the numerous rejections under 35 U.S.C. § 112 as set forth above.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(f) he did not himself invent the subject matter sought to be patented.

21. Claims 1-9 are rejected under 35 U.S.C. § 102(f) because the applicant did not invent the claimed subject matter.
22. A search of the prior art has revealed documentation made of record by the Examiner that substantiates a rejection under 35 U.S.C. § 102(f). The facts, as understood by the Examiner, are as follows:

- David H. Hoeft, sole inventor of record in the instant application, is president of Software Engineering, Inc. (hereafter Software Engineering), as shown by the oath and declaration as well as the power of attorney on record with the office.
- Software Engineering produces and markets Symmetrica®, a computer drafting & modeling software package, as shown by Software Engineering's website, www.softwareengineering.com/clients.htm.
- Software Engineering publicly acknowledges M.E.P.CAD as not only clients of Software Engineering, but also acknowledges M.E.P.CAD as responsible for developing Software Engineering's Symmetrica® product into AutoSPRINK®, beginning in 1997, as shown by Software Engineering's website, www.softwareengineering.com/clients.htm.

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- The trademark status for "AUTOSPRINK" confirms its first commercial use in 1997 and is owned by M.E.P.CAD.

The documented link between Software Engineering and M.E.P.CAD, bolstered by the anticipatory nature of the documentation for AutoSPRINK®, necessitates a complete rejection of the claimed invention under 35 U.S.C. § 102(f) until evidence made of record unambiguously defines inventorship of the claimed swing-joint creation feature. The evidence available to the office gives every indication that M.E.P.CAD is responsible for inventing the swing-joint creation feature.

Conclusion

Art considered pertinent by the examiner but not applied has been cited on form PTO-892. Applicant is respectfully reminded of the duty to disclose under 37 CFR 1.56 and acknowledged by Applicant in the oath and declaration filed before the office on September 27, 2001. The absence of an Information Disclosure Statement in this application has been noted. Please see the attached requirement for information under 37 CFR 1.105.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Proctor whose telephone number is (571) 272-3713. The examiner can normally be reached on 8:30 am-4:30 pm M-F.

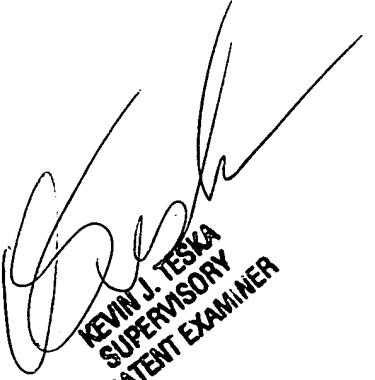
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin J Teska can be reached on (571) 272-3716. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-3713.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason Proctor
Examiner
Art Unit 2123



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KEVIN J. TESKA
SUPERVISORY
PATENT EXAMINER

Requirement for Information – 37 CFR 1.105

Applicant and the assignee of this application are required under 37 CFR 1.105 to provide the following information that the Examiner has determined is reasonably necessary to the examination of this application:

1. MPEP 704.11(B): The trade name of any goods or services the claimed subject matter is embodied in.
2. MPEP 704.11(G): Identification of pending or abandoned applications filed by at least one of the inventors or assigned to the same assignee as the current application that disclose similar subject matter that are not otherwise identified in the current application.
3. MPEP 704.11(N): Comments on information of record which raises a question of whether applicant derived the invention from another under 35 U.S.C. 102(f). Specifically, the Examiner requests comments regarding the rejections under 35 U.S.C. § 102(f) in the attached office action.
4. Also requested is evidence of the first appearance of the claimed invention in the AutoSPRINK® product or documentation.

The fee and certification requirements of 37 CFR 1.97 are waived for those documents submitted in reply to this requirement. This waiver extends only to those documents within the scope of this requirement under 37 CFR 1.105 that are included in the applicant's first complete communication responding to this requirement.

Any supplemental replies subsequent to the first communication responding to this requirement and any information disclosures beyond the scope of this requirement under 37 CFR 1.105 are subject to the fee and certification requirements of 37 CFR 1.97.

The applicant is reminded that the reply to this requirement must be made with candor and good faith under 37 CFR 1.56. Where the applicant does not have or cannot readily obtain an item of required information, a statement that the item is unknown or cannot be readily obtained will be accepted as a complete reply to the requirement for that item.

This requirement is an attachment of the enclosed Office action. A complete reply to the enclosed Office action must include a complete reply to this requirement. The time period for reply to this requirement coincides with the time period for reply to the enclosed Office action.

Conclusion

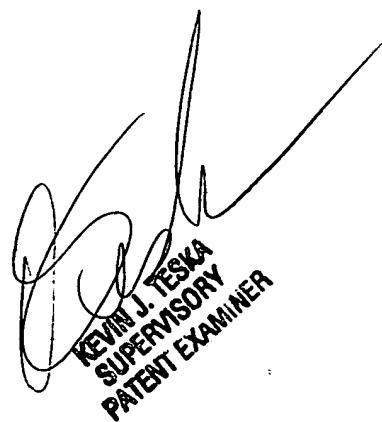
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Proctor whose telephone number is (571) 272-3713. The examiner can normally be reached on 8:30 am-4:30 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin J Teska can be reached on (571) 272-3716. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason Proctor
Examiner
Art Unit 2123

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A handwritten signature in black ink, appearing to read "KJT". To the right of the signature, the name "KEVIN J. TESKA" is printed vertically, followed by "SUPERVISORY" and "PATENT EXAMINER".